Author’s response to reviews

Title: Individual socio-demographic factors and perceptions of the environment as determinants of inequalities in adolescent physical and psychological health: the Olympic Regeneration in East London (ORiEL) study

Authors:

Neil R Smith (n.r.smith@qmul.ac.uk)
Daniel J Lewis (daniel.lewis@lshtm.ac.uk)
Amanda Fahy (amanda.fahy@qmul.ac.uk)
Sandra Eldridge (s.eldridge@qmul.ac.uk)
Stephanie J.C. Taylor (s.j.c.taylor@qmul.ac.uk)
Derek G Moore (d.g.moore@uel.ac.uk)
Charlotte Clark (c.clark@qmul.ac.uk)
Stephen A Stansfeld (s.a.stansfeld@qmul.ac.uk)
Steven Cummins (steven.cummins@lshtm.ac.uk)

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Author’s response to reviews: see over
Dear Editors,

I enclose the revised manuscript “Individual socio-demographic factors and perceptions of the environment as determinants of inequalities in adolescent physical and psychological health: the Olympic Regeneration in East London (ORiEL) study” in consideration for publication in BMC Public Health.

The latest review asked for small number of clarifications and compulsory revisions. These have been addressed on a point by point basis and are as follows:

**Compulsory revisions**

1. I remain concerned by your concluding line in both the abstract and conclusion paragraph, that “Health planners and providers should ensure that local neighbourhoods provide a safe and accessible environment for young people.” … as a concluding sentence it implies this is what your work shows, but I don’t think your data support this conclusion.

This policy recommendation has been removed from the concluding remarks.

2. Was there any statistically significant variance in your outcomes attributable to the school level? Regardless of its significance, can you please report this in the tables?

To test for the effect of school clustering a likelihood ratio test compared the two-level model against the appropriate single-level linear/logit model. The p value for the LR test has been added to the table for each outcome. Variance in sedentary activity was attributable to school level, but there were no significant differences between models for all other outcomes.

3. Your limitation should be briefly extended to acknowledge some of the limitations I raised in my original review, which were eloquently defended, but which nonetheless remain limitations i.e. lack of sampling weights, correct reporting of multilevel models

A line has been added to the limitations section stating that sampling weights could not be derived due to difficulties in obtaining an accurate denominator population within schools so results should be generalised with caution.

We have reported on the effect of using a multilevel regression model. The importance of controlling for school clustering, estimated by the random effects models, has now been stated within tables 2-7 (see point 2)

**Minor revisions**

4. It’s unclear from how this is written whether this [recruitment] was an inbuilt design feature of your sampling method, or that when you looked at your sample of schools you had good spread or variation on these variables

This section has been re-organised to so that the resulting sample is discussed after all sample procedures have been explained. The sample characteristics are presented in light of the refusals:

“Despite the refusals the consequent sample featured single sex schools and drew on the largest and smallest schools in the four boroughs which were affiliated to a range of religious denominations.”
5. How were the 7 schools selected to be completely sampled, vs the 18 who were partially sampled in the year group under study?

School year groups varied considerably in size, between 120 and 300. Schools with the smallest year groups were entirely surveyed to maintain study power; teachers at the larger schools selected sub-groups according to the ease of surveying within the school timetable.

The following detail has been added to the text:

“To attain sample power the whole school year was surveyed in seven schools which had relatively small year groups. The remaining 18 larger schools provided an allocation of adolescents selected on the basis of school timetabling logistics.”

6. I am not sure the under-representation of some ethnic groups can be “off-set” by the over-enumeration of others.

“Off-set” has been replaced by “contrasted with”:

The ORiEL sample was slightly under-represented by females and Bangladeshi and White UK respondents; this ethnic difference contrasted with an ORiEL over-sample of White Other and Mixed White ethnic groups.

7. “Discussion” – use of the word mediating – these are not mediators but confounders as treated in your analyses.

“Mediators” has been changed to “confounders”

8. “This suggests a more salient role for…” – it is only more salient if perceptions of the environment are not auto-correlated with mental health symptoms. i.e. not just really measuring the same latent factor

This line has been removed.

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Thank you for the comments.